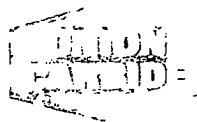


FILE 11309
11309



UNION CARBIDE CORPORATION

METALS DIVISION

P O BOX 579 1625 ROYAL AVE NIAGARA FALLS NEW YORK 14302

July 7, 1982

Mr R F Kelly
Occupational Safety and Health
65 Court Street
Buffalo, NY 14202

Dear Mr Kelly

We would appreciate an extension to the 90-day deadline we received with your Notice of Inspection Findings concerning concentrations of source material. Our intention at this time is to decontaminate the areas and store the material on site until disposal alternatives are fully investigated. I will be applying for a license amendment once we have determined details such as volume, storage site location, fencing, etc.

Very truly yours,

A handwritten signature in cursive script, appearing to read "D. R. Brosnahan".

D R Brosnahan
Radiation Safety Officer

DRB smn

cc Dr D J Hansen

UCCNHT0001335



INTERNAL CORRESPONDENCE

Copy FAK

11309

METALS DIVISION

P O BOX 579 4625 ROYAL AVE, NIAGARA FALLS, NEW YORK 14302

To (Name) Dr. D. J. Hansen
 Division
 Location NIAGARA

Date June 17, 1982
 Originating Dept: Minerals Technology
 Answering letter date

Copy to Messrs. R. G. Beverly
 L. G. Evans
 T. K. Kagetsu
 R. J. Klotzbach
 F. T. Temple
 R. G. Woolery

Subject Technology Decontamination
 Requirements

FILE # 11309

In pursuing the State of New York for more of their radiological analyses, I have learned that in fact all nine areas sampled behind Bldg. 166 are out of compliance - not just the four cited. The inspector had assumed that the source material was natural uranium, allowing a maximum activity of 200 pCi/g. The source material is thorium, which due to a lower activity per unit weight, must be reduced to 55 pCi/g to be in compliance with the <0.05% (<500 ppm) requirement.

The state's analyses are as follows:

Area	Gross Activity - Raw pCi's		pCi/g	
	Surface	2 - 2-1/2" Deep	Surface	2 - 2-1/2" Deep
1	5.8	9.5	31.4	132 0
2	2.6	41.7	25.4	107.5
3	6.3	9.5	101.1	136 8
4	47.0	15 2	215.9	108 5
5	37.4	6.0	176 3	45 9
6	1400 6	861.2	3413.3	4056 5
7	34.6	35.8	312 3	207.8
8	17.3	72 9	154.7	249 5
9	9.6	16.6	50 6	98 9

Chemical analyses of surface samples I removed from Areas 5 and 8 are as follows:

	% U ₃ O ₈	% ThO ₂
Area 5	0.021	0.23
Area 8	0.039	0.48

Spectrographic analyses of these two areas and Area 6 are attached. The Ta, Cb, and Th contents indicate that the contamination is a residue of ferrocolumbium production and not from the former Area Plant.

Listed below are four possible actions which may bring us into compliance with state regulations:

UCCNHT0001336

June 17, 1982

<u>Case</u>	<u>Action</u>
1	Decontaminate east track to permit track usage requested by Elkem. Relocate residue within west track and Area 6. Fence and post to control access.
2	Decontaminate along both tracks and Area 6. Relocate residue to neighboring UCC property. Fence and post.
3	Decontaminate as in 2. Ship residue to Barnwell, SC for burial.
4	Decontaminate as in 2. Ship residue to Uravan, CO for processing and disposal as tailings.

Case 1 is the least expensive, but also a short term arrangement due to the change in property ownership. Case 2 offers the following: 1) Intermediate term solution allowing time to fully investigate disposal alternatives, including the possibility of a dump in the Northeast necessary by 1986 when present dumps can ban waste from outside states. 2) Frees Technology property for change in ownership. 3) Any additional material, such as may be found during any follow-up surveys, can be handled. This case, however, is subject to approval by the State Department of Labor by amendment of our Radioactive Materials License No. 950-0139 - the license authorizing possession of 6000 lb of thorium obtained for ferrocolumbium production.

Cases 3 and 4 would result in a permanent solution, but would be very expensive.

To obtain preliminary cost information, Lee Evans was consulted. Based on an assumption of 2000 cubic feet of contaminated material, the ballpark costs for Case 2 would be on the order of \$100,000. Cases 3 and 4 both would be roughly double this figure. The burial costs at Barnwell in Case 3 approximately equal the increased costs of transportation to Uravan for Case 4. Scrap such as railroad ties must go to Barnwell in any event. It must be emphasized that these values are dependent upon the volume to be relocated, which at present is unknown. A program to delineate the surface areas and depths of contamination is necessary for a realistic estimate.

The deadline for cleanup is July 2, 1982, though I was informed by the state inspector that we can request an extension at that time. A statement of our decontamination plan will be appropriate with such a request.


D. R. Brosnahan
Radiation Safety Officer

DRB:jk

Attach.

UCCNHT0001337

OPTICAL EMISSION SPECTROGRAPHIC ANALYSES OF SAMPLES

FROM SELECTED AREAS SOUTH OF BLDG 166 - %*

	<u>Al</u>	<u>B</u>	<u>Ba</u>	<u>Be</u>	<u>Ca</u>	<u>Cb</u>	<u>Ce</u>	<u>Co</u>	<u>Cr</u>	<u>Cu</u>	<u>Fe</u>	<u>Ga</u>	<u>Hf</u>	<u>La</u>	<u>Mg</u>	<u>Mn</u>	<u>Mo</u>
Area 5, Surface	2.4	.024	.03	.0024	2.4	.6	.9	.03	2.4	.03	3	.03	.024	.24	2.4	.3	.024
Area 6, Surface	.6	.012	.024	.0024	.6	M	1.2	.012	.12	.006	6	-	.03	.24	.12	.24	-
Area 6, 6" Deep	3	.009	.006	.0012	.6	.6	-	.024	.9	.009	3	-	-	-	M	.12	-
Area 8, Surface	2.4	.03	.06	.0024	2.4	2.4	2.4	.06	.24	.03	3	.06	.03	.24	.6	6	.012
	<u>Na</u>	<u>Ni</u>	<u>P</u>	<u>Pb</u>	<u>Sc</u>	<u>Si</u>	<u>Sn</u>	<u>Sr</u>	<u>Ta</u>	<u>Th</u>	<u>Ti</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>Y</u>	<u>Yb</u>	<u>Zr</u>
Area 5, Surface	.24	.06	.06	.06	-	M	.6	.03	3	.24	.6	-	.06	.9	.06	-	.24
Area 6, Surface	-	.009	-	.3	.24	2.4	.9	.024	M	2.4	M	2.4	.024	.24	3	.24	.06
Area 6, 6" Deep	.12	.024	-	.09	.024	M	.6	-	M	.24	.6	-	.024	-	.6	.06	.03
Area 8, Surface	.3	.06	.24	.024	-	M	.6	.024	3	.3	.6	-	.06	2.4	.06	-	.6

* The following elements were looked for but not detected: - Ag, As, Au, B1, Cd, Ge, Hg, In, Ir, Li, Os, Pd, Pt, Re, Rh, Ru, Sb, Te, Tl, Zn.

To include probable error, divide by three for lower limit, and multiply lower limit by ten for upper limit.

Dash indicates none detected, M indicates >10%.

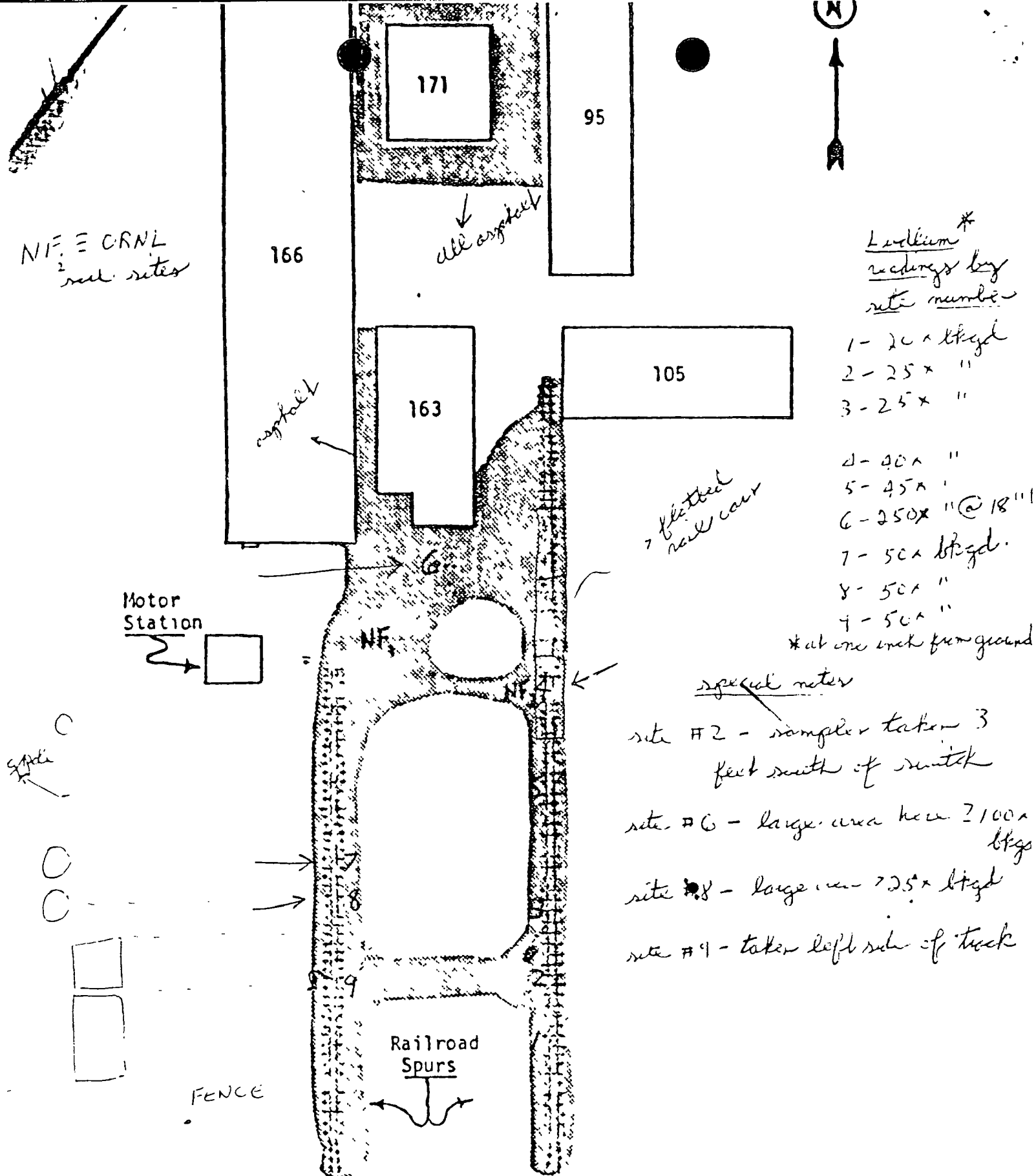


Fig. 2. Location of elevated surface gamma-ray levels (indicated by shading) in the Technology Area at UCC-MD, Niagara Falls, NY. (1)

11309
FILE - 11309

August 11, 1982

To: Dr. T. J. Kagetsu
Mr. L. G. Evans

From: F. A. Rutledge

Subject: Contaminated Area South of Building 166 -
Letter D. R. Brosnahan to D. J. Hansen, 6/17/82

I met with Lee Evans and Dave Brosnahan on Tuesday afternoon, August 10, 1982, to review decontamination requirements for the subject area. The following was discussed and may be used as a basis for an action plan:

1. Develop a sampling plan to firmly establish the area of contamination; i.e., pattern of sample holes and depth to check, etc.
2. Establish degree of clean-up required:
 - a. Comply with State of New York requirements--55 pCi/g?
 - b. Comply with EPA regulations for unrestricted use--10 pCi/g?
 - c. Something in between?
3. Determine volume of material to be disposed of based on degree of clean-up established--2a, 2b, or 2c.
4. Determine disposal location:
 - a. Load and ship to approved repository?
 - b. Load and ship to Uravan for processing?
 - c. Load and move to another area of UCC Niagara Plant, and fence?
 - d. Some other approved disposal method?
5. Develop cost estimate based on degree of clean-up required and method of disposal agreed upon.
6. Develop plan to dispose of scrap and remove railroad tracks that interfere with removal of residue. Check scrap for contamination prior to disposal, especially embedded railroad ties.
7. Award contract to excavate material to satisfy conditions of 2a, 2b, or 2c and ship or relocate as determined by 4a, 4b, 4c, or 4d.
8. Check area for compliance.
9. Replace railroad tracks.

I recommend that a meeting be held to reach an agreement on options outlined in Items 2 and 4 above and also to establish a general time frame for the project.

FAR/cep

F. A. Rutledge

UCCNHT0001340



UNION CARBIDE CORPORATION
METALS DIVISION

137 47TH STREET, P O BOX 97, NIAGARA FALLS, N Y 14302
TELEPHONE 716 278 3000
CABLE TWIX NO 710 524 1664

TECHNOLOGY DEPARTMENT
— ENGINEERING

October 1, 1984

South Carolina Department
Health Environmental Control
2600 Bull Street
Columbia, SC 29201

ATTENTION: HEYWARD G. SHEALY, CHIEF
BUREAU OF RADIOLOGICAL HEALTH

Dear Sir:

This letter is in response to your letter of September 18, 1984, which requires our submittal of corrective measures being taken to eliminate the stated violation of section 1.2, Department Regulation 61-83, and compliance with all applicable requirements and regulations.

There is, of course, no excuse for the omission of the package label "Class A," but an explanation of the circumstances under which it happened will clarify the problem.

We were making simultaneous shipments to Chem-Nuclear at Barnwell, South Carolina, and our plant at Uravan, Colorado. The material being shipped to both locations is from the same cleanup activity. Clean soil with higher concentrations (0.13%) of uranium is being shipped to Uravan for processing while soil with debris and low uranium concentrations is being shipped to Barnwell. Our contractor mistakenly labeled the Uravan shipments "Class A" and omitted the label on the Barnwell shipment. All shipping to Uravan is completed. Therefore, a mix up like this will not happen again.

We apologize for the inconvenience and appreciate that no further enforcement action is anticipated. If additional information is required, please contact the writer.

Sincerely,

Lee G. Evans
Project Engineer

1b

UCCNHT0001341



Copy TJK
5/10/84

File# 11309

UNION CARBIDE CORPORATION P O BOX 579 4625 ROYAL AVE. NIAGARA FALLS N Y 14302
METALS DIVISION

May 2, 1984

Referred to
For

JPB / *File*

REC'D MAY 3

Noted by
File
Subject

11309

Mr. Robert F. Kelly
Senior Radiologist
New York State Department of Labor
State Office Building
65 Court Street
Buffalo, NY 14202

Subject: Radioactive Materials License 950-0139 - Status Report

Dear Mr. Kelly:

We have obtained burial allocation at Barnwell, SC for August 1984 in the amount of 1900 ft³.

Based on our volume estimate of 7000 ft³, it will take us all of 1984 and into 1985 to complete the burial because competition for space tends to intensify at the end of the year.

However, your verbal request to delay the work pending a New York State Department of Health survey, not scheduled by H. Michaels until the end of May, will seriously delay the project resulting in loss of allocated burial space. Future schedules depend on the rapidity with which you receive analytical results, make your judgements and issue approval to proceed.

We cannot commit any manpower or funding to a project which has not received the approval of your department. That is the nature of any endeavor involving a state or federal license where a clear cut approved end result is projected which must receive prior approval from the regulatory agency. I would be remiss in my accountability for our limited resources if I acted otherwise.

Up to this point we had your verbal approval as Health Department Representative to proceed with the action plan transmitted to you on April 4, 1984. Since this is not the case, when your department completes its investigation, written approval for the contemplated actions is necessary for the commitment of Union Carbide resources. I now doubt we can complete the work before July 31 and the schedule transmitted to you in my April 4 reply to your March 29, 1984 reissue of your notice of inspection findings, based on a previous New York State survey, is voided.

UCCNHT0001342

Mr Robert F. Kelly
May 2, 1984
Page 2

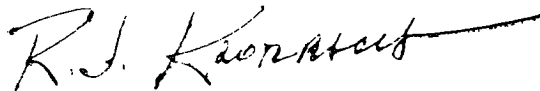
Since our meeting in the first week of April we have performed the following:

April 6	1	Hired agents at Barnwell, SC.
April 13	2	Applied for shipping permit
April 17	3.	Released \$33,000 of engineering funds and started detail work
April 18	4	Began preparation of work descriptions and purchase orders
April 25	5.	Cleaned up the area for equipment access
April 25	6.	Received shipping permit.
May 1	7	Received partial burial space allocation

As you can see, in a period of three weeks we have actively pursued every phase of the project and acted in good faith by issuing documented status reports to you covering each of those items. Nobody has raised any question until the request for "holdup of cleanup". If you issue written approval to proceed, as planned, we will not hold up anything pending your survey except the actual excavation which we must be prepared to begin by June 15.

We will await your advice and approval for this corrective action.

Very truly yours,



R J Klotzbach
Director of Technology

/mau

cc: Messrs. W C Thurber
L. G. Evans
R. A. Crago/R E DeWeese - Elkem

UCCNHT0001343

INTERNAL
CORRESPONDENCEUNION CARBIDE CORPORATION 137-47th Street, P.O. BOX 97, NIAGARA FALLS NY 14302
METALS DIVISION

To (Name)	Mr. R. J. Klotzbach	Date	May 1, 1984
Division	Umetco Minerals Corporation	Originating Dept	TECHNOLOGY DEPARTMENT — ENGINEERING
Location	Niagara Falls, NY	Area	
Copy to	Messrs. T. J. Kagetsu F. T. Temple G. E. Walck File: 11309	Subject	Soil Decontamination - South of Bldg. 166, Niagara

We have obtained a burial allocation at Barnwell, SC, for August 1984 of 1900 ft.³. Competition for space tends to intensify toward the end of each year.

Based on our volume estimate of 7000 - 8000 ft.³, it will take us all of 1984 and maybe into 1985 to complete the burial.

All of the soil, however, will be excavated and packaged by August 1 and stored in the Niagara Plant. I have contacted Frank Temple regarding a suitable storage site. This should bring us into compliance with our NYS Radioactive Material License (950-D139).

I'll keep you posted.

L. G. Evans

/dac8

UCCNHT0001344



CC TJK
FILE 11309

UNION CARBIDE CORPORATION P O BOX 579, 4625 ROYAL AVE, NIAGARA FALLS N Y 14302
METALS DIVISION

April 30, 1984

Mr. Robert F. Kelly
Senior Radiologist
New York State Department of Labor
State Office Building
65 Court Street
Buffalo, NY 14202

Subject: Radioactive Materials License 950-0139

Dear Mr. Kelly:

As you requested on this date I am forwarding the survey data we made to define our problem in the area contaminated by ore unloading operations.

You should have in your files the result of the New York State survey made in December 1981 which resulted in a citation for failure to meet licensing requirements. Your survey may be more accurate than ours.

In order to expedite this matter, I am attaching our internal design memo describing the problem and our alternates for solution. This memo should be considered Union Carbide confidential information released to your department in answer to questions which you have raised related to the citation.

The detailed cost estimates have been deleted from this copy but are summarized on Page 9. You can see we have adopted the permanent solution alternative requiring the highest expenditure of funds, contrary to the engineers' recommendation. In addition, our costs have escalated to \$400,000 from the \$335,000 estimate in the memo.

The information you require for the gamma probes is on Page 3. A drawing of the entire suspect area is enclosed with gamma survey readings on 10 foot centers.

Chemical analysis of "grab" samples were made and a table is displayed converting to pCi/gram. These samples were taken primarily to determine the extent and depth of both thorium and uranium contamination since, at the time, we did not know the source of the original spillage. The high thorium is a definite signature that the source was primarily columbium bearing ores.

UCCNHT0001345

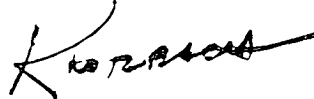
Mr. Robert F. Kelly
April 30, 1984
Page 2

Table III shows that sampling for chemical analysis was done at depth for the areas displaying the highest surface contamination. Activity decreases dramatically with depth so we are certain we have no long standing problem and a fix can be made.

We intend to do in-house monitoring while the work is in progress. We will not complete our efforts until (1) an independent survey is made, and (2) your department conducts it's own survey on the decontaminated area. Our independent surveyors have not as yet been hired but the paper work for purchase and work scope agreements is in preparation. We will keep you informed.

Please feel free to call me about our progress or any other details you require. I will continue to send you status reports.

Very truly yours,



R. J. Klotzbach
Director of Technology

/mau
Attachment

cc: Messrs. W. C. Thurber w/a
L. G. Evans
R. A. Crago/R. E. DeWeese - Elkem

UCCNHT0001346

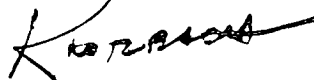
Mr. Robert F. Kelly
April 30, 1984
Page 2

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Please feel free to call me about our progress or any other details you require. I will continue to send you status reports.

Very truly yours,

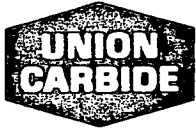


R. J. Klotzbach
Director of Technology

/mau
Attachment

cc: Messrs. W. C. Thurber w/a
L. G. Evans
R. A. Crago/R. E. DeWeese - Elkem

UCCNHT0001347



CC TSK
FILE 11309

UNION CARBIDE CORPORATION P O BOX 579 4625 ROYAL AVE, NIAGARA FALLS, N Y 14302
METALS DIVISION

April 26, 1984

Mr. Robert F. Kelly
Senior Radiologist
New York State Department of Labor
State Office Building
65 Court Street
Buffalo, NY 14202

Subject: Radioactive Materials License 950-0139 - Status Report

Dear Mr. Kelly:

The area around the railroad tracks which contains low level radioactive ore contamination has been cleared permitting work to proceed. Clearance of railroad flat cars and other stored materials was completed on April 25, 1984.

Detailed engineering for contractor work has begun with the release of engineering funding to an active project on April 17, 1984.

Very truly yours,

R. J. Klotzbach
Director of Technology

/mau
Attachment

cc: Messrs. W. C. Thurber w/a
L. G. Evans
R. E. DeWeese - Elkem w/a

UCCNHT0001348

4-25-84

Memo To LEO EVANS;

WENT OUT TO SITE SOUTH OF BLDG 166 (1:30 - 2:30 PM)

MET KLOTZ & MURPHY - LATER DICK CRAIG.

ELKEM IS SEPARATING MATERIAL TO REMAIN IN STORAGE AND SCRAP.

THE SCRAP WILL BE DISPOSED OF SWIFTLY - OTHER MATERIAL STORED ON SOUTH END OF MAIN CONCRETE PAD.

DON HANSEN KNOWS HISTORY OF MATERIALS, WHICH UNATCO NEEDS TO MAKE OR DISPOSE OF - SUCH AS ^{LOW CHROME} K-R PALLETS IN WOODEN SKIPS (POSSIBLE FOR USE AS BACKFILL).

AND FERRUPOCS, IN RUSTY STEEL DRUMS - CONDITION OF SKIPS &

DRUMS MAKE MOVEMENT OF THE MATERIALS VERY DIFFICULT.

IT WAS AGREED WITH KLOTZ & MURPHY AND AGAIN LATER WITH

CRAIG THAT THE TRACKS TO BE TAKEN UP ~~WILL~~ ARE NOT TO BEREPLACED - RAILS ARE ELKEM PROPERTY (PER KLOTZ) AND ~~THEY~~CAN BE ^{CUT-UP AND} STORED ON A PAD AND IF CLEAN BE SOLD BY ELKEM ASSCRAP, THE TISS CHECKED FOR RADIOACTIVITY AND ~~THE~~ AFTER CLEANING.

FOUND TO BE CLEAN CAN BE GIVEN AWAY, IF NOT, SHIP OUT IN BOXES.

KLOTZ WOULD LIKE BOXES LINED WITH A SUITABLE LINER TO INSURE NO LEAKAGE.

MURPHY SUGGESTED A LINER SIMILAR TO WHAT THEY USE IN

THEIR 4' SKIP BOXES (THESE ARE SIMILAR TO THE "BOGS" WE USED).

WE WILL NEED TO SEE HANSEN ABOUT MOVING "OUR" MATERIALS.

RAILROAD FLAT CARS HAVE BEEN MOVED TO A LOCATION

NEAR BLDG 105 OUT OF OUR WAY.

BUILDING 105 NOT AVAILABLE FOR STORAGE.

COPY TO: T.J.K.
FILE 11309. ✓Gil
///